

## REVIEW OF THE AUSTRALIAN SPECIES OF *ARCTORNIS* GERMAR, 1810 (LEPIDOPTERA: EREBIDAE: LYMANTRIINAE)

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### Abstract

Four new species of *Arctornis* Germar, 1810 are described and illustrated from Australia: *Arctornis queenslandica* sp. n., *Arctornis lucens* sp. n., *Arctornis ravenshoeae* sp. n., *Arctornis cairnsae* sp. n. and *Arctornis commoni* sp. n. All are confined to northeastern Queensland.

### Introduction

The genus *Arctornis* Germar, 1810 is widely distributed throughout the Oriental tropics, Sundaland and New Guinea and also extends into the Palaearctic region. It is extremely diverse and, as currently defined, probably includes at least 200 species. Only in Borneo has a major part of the fauna been revised (Holloway 1999). The genus has long been recognised as being represented in Australia (as *Redoa* Walker, 1855), with the first recorded species wrongly identified as the Oriental *Arctornis submarginata* Walker, 1855 (Turner 1921). The Australian checklist of Lepidoptera dealt with the issue of *A. submarginata* and listed one undescribed species (Edwards 1996). In his review of the Bornean species, Holloway (1999) provided the current interpretation of *Arctornis* and broadly defined the genus on the basis of the male genitalia: the harpe is well developed and arises from the sacculus and the aedeagus is short and usually has a pair of finger-like processes developed on the rim of its orifice. Tymbals are present in the abdomen of the male. Adults are frequently very similar in general facies, being satiny white, sometimes with a small black discal spot. Correct determination usually requires examination of the genitalia. This similarity also makes it difficult to associate males with females.

In the material examined for this present study, several specimens bear labels indicating that they had been barcoded. Sexes were associated in three species by use of this barcoding, which was based on similarity of COI sequences. Details of analyses, sequence data, geographical and ecological data are available through the Barcode of Life Data System (BOLD: Ratnasingham and Hebert 2007) and BOLD process ID's are given for the relevant specimens under material examined. In the descriptions below, both sexes are similar unless otherwise indicated, while forewing length is the distance from the base of the wing at its articulation to the tip of the apex. The known Australian fauna comprises five species, which are described and illustrated below.

Abbreviations: AM – Australian Museum, Sydney; ANIC – Australian National Insect Collection, Canberra; APM – collection of A.P. Mackey, Yandina; UQIC – University of Queensland Insect Collection (housed at the Queensland Museum); QM – Queensland Museum, Brisbane.

***Arctornis* Germar, 1810***Cassidia* Walker, 1862*Chatracharta* Walker, 1862*Ciaca* Walker, 1865*Cobanilla* Moore, [1883] 1882-3*Kanchia* Moore, [1883] 1882-3*Lymantralex* Collenette, 1938*Redoa* Walker, 1855*Scarpona* Walker, 1862*Topomesa* Walker, 1866Type species: *Arctornis l-nigrum* (Müller, 1764).***Arctornis queenslandica* sp. n.**

(Figs 1-7)

*Types. Holotype* ♂, QUEENSLAND: 14 km W by N of Hope Vale Mission, 8.x.1980, E.D. Edwards, ANIC Genitalia Slide no. 19839, in ANIC. *Paratypes*: 1 ♀, 14 km W by N of Hope Vale Mission, 8.x.1980, E.D. Edwards, ANIC Genitalia Slide no. 19838, in ANIC; 1 ♂, Kuranda, 1-15.ii.2008, D.C.F. Rentz, ANIC Genitalia Slide no. 19846, in ANIC; 1 ♀, Hervey's Range, 8.xi.2006, G. Cocks, G290, DNA Barcode LOQT506-06, gvc6341, in APM.

*Additional material examined.* QUEENSLAND: 2 ♂♂, Hervey's Range, June 2006 & 26.iv.2007, G. Cocks, DNA Barcodes: LOQT380-06, gvc5833-1L and LOQTB344-07, gvc7087-1L respectively, in APM; 1 ♂, 1 ♀, Hervey's Range, 1.v. 2009, G. Cocks, in APM; 2 ♂♂, Cairns, 8.i.1987 & 1.i.1989, A.P. Mackey, in APM; 1 ♂, West Claudie River, 4 km SW of road junction, 1.xii.1986, G. Daniels & M. Schneider, in UQIC.



**Figs 1-2.** *Arctornis queenslandica* sp. n: (1) Holotype male, Hope Vale Mission, Qld; (2) Paratype female, Hope Vale Mission, Qld.

*Description* (Figs 1-2). Head lightly scaled, white, with pair of purplish brown dots between eyes just below antennal bases; pair of thin purplish brown bars between antennal bases which extend almost to mid-line; labial palp upturned, white, with purplish brown tip; antennal filament with fine dusting of white scales that become worn away, pectinations pale reddish

yellow, long in male but very short in female. Thorax white; legs white, pro- and mesothoracic legs with purplish brown spot towards proximal end of tibia and on first tarsal segment. A faint spot may be present on joint between femur and tibia. Abdomen lightly scaled, silvery white. Forewing length: male 18-20 mm; female 28 mm. Both forewing and hindwing lightly scaled and glistening white. Scales in central part of wings appear to be lost easily leaving transparent white wing membrane and some sparse areas of glistening scales along margins and discal vein; this effect more apparent in female where most scales are lost. Underside similar except that scales less glistening.

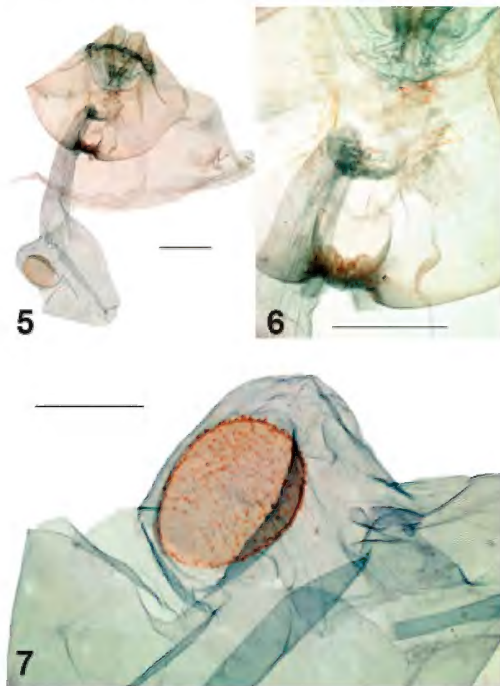


**Figs 3-4.** *Arctornis queenslandica* male genitalia: (3) ventral view, Hope Vale Mission, Qld, slide ANIC19839; (4) aedeagus, Kuranda, Qld, slide ANIC19846. Scale bars *ca* 1 mm.

Male genitalia (Figs 3-4). Tegumen and vinculum lightly sclerotised and loosely united; tegumen hood-like; vinculum a narrow U-shaped strap; saccus weak; uncus well sclerotised, short, broad, deep and bifid, slightly hooked, posterior face crenulate, punctulate and setose with long setae dorsally and laterally; valva elongate, subrectangular and with bluntly rounded apex, costa folded inwardly, sacculi large and well developed, adpressed but not fused basally, outer surface of dorso-distal part of valva bears small, triangular lobe covered with long, fine, setae, internal ventro-distal part of valva is in form of stout, downturned beak, harpe well developed and partly embedded in pouch formed between sacculus and costal fold, flat, slender, slowly tapering to fine point, about two thirds the length of the valva; juxta moderate but lightly sclerotised, slightly reflexed, strongly concave, dorsal edge emarginate in

ventral view; aedeagus short, broad and deep, weakly sclerotised except for two slender, finger-like dorso-lateral projections from the carina penis, caecum reflexed ventrally, vesica without ornamentation.

Female genitalia (Figs 5-7). Papillae anales shallowly and bluntly triangular, covered with long fine setae; apophyses posteriores slender and slightly curved and tapering, extending well into segment VIII; segment VIII broad and collar like, apophyses anteriores very short and truncate; pseudopapillae long, narrow, tapering slightly from posterior to anterior, setose; lamella postvaginalis almost membranous, crescent-shaped, bearing a series of long setae along its posterior edge; the deep channel-shaped sinus vaginalis occupies most of the medial area of sternite VIII, the lamella antevaginalis forms a small cup at its anterior part and at the bottom of the cup is a complex of sclerotised folds; the opening of the ostium bursa is situated at the end of the channel and broadens toward thin-walled sac of corpus bursae; signum large and ovate, covered with rugged, short, stout spines.



**Figs 5-7.** *Arctornis queenslandica* female genitalia, Hervey's Range, Qld, slide G290: (5) overview; (6) sterigma; (7) signum. Scale bars ca 1 mm (5-6) or 0.5 mm (7).

*Diagnosis.* This is the largest of the Australian *Arctornis* species and the only one with the satiny, translucent sheen to the wings. The male and female genitalia are distinctive and unlike any other Australian species.

*Etymology.* *queenslandica* (Latin adjective) – pertaining to Queensland.

*Distribution.* North Queensland: coastal ranges from Townsville north to Iron Range in Cape York Peninsula.

*Remarks.* Sexes, originally associated by size, were confirmed to be conspecific by barcoding. Specimens in collections often show pale cream discolouration along the forewing costa, at the vein bases and on the thorax and abdomen, but these marks are not found on freshly caught material. This species is similar to *Arctornis perfecta* (Walker, 1862) from Sundaland and Sulawesi, but in *A. perfecta* the harpe is much longer, extending well beyond the end of the valve, and in the female the lamella postvaginalis has a large medial lobe on the anterior margin (Holloway 1999: figs 354, 378).

### *Arctornis lucens* sp. n.

(Figs 8-14)

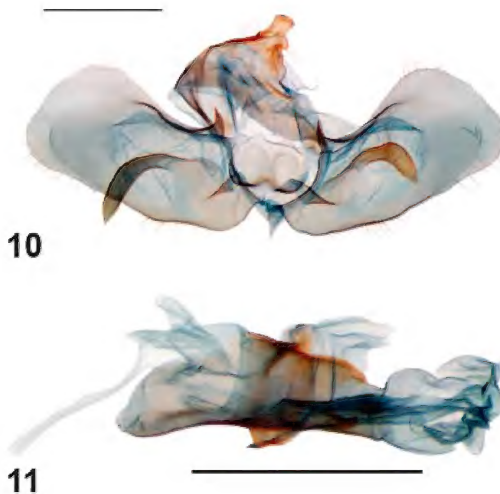
*Types.* *Holotype* ♂, QUEENSLAND: Mission Beach near Tully, 30.x.1967. R. Dobson, ANIC Genitalia Slide no. 19834, in ANIC. *Paratypes*: 1 ♀, Cairns, 1-20.vii.2005, P. Hebert, G336, DNA Barcode: LOQC411-05, 05-QLD-00411; 1 ♂, Kuranda, 1-15.xii.2005, D.C.F. Rentz. ANIC Genitalia Slide no. 19833, ANIC DNA no. 000971, in ANIC.

*Additional material examined.* QUEENSLAND: 1 ♂, Kuranda, 16-31.xii.2005, D.C.F. Rentz. ANIC DNA no. 000970; 1 ♂, 1 km SE of Mt. Cook, Cooktown, 13.x.1980, E.D. Edwards, ANIC Genitalia Slide no. 19836; 1 ♂, Mt. Webb National Park, 50 km N. Cooktown, 11-14.vii.1976, G.B. & S.R. Monteith, ANIC Genitalia Slide no. 19842, all in ANIC; 1 ♂, Barrine, April 1948, K469601, in AM; 3 ♂♂, Kuranda, 1.iv.1928, 3.iv.1928 & 1.iv.1928, G143, G144 & G150, all in UQIC.



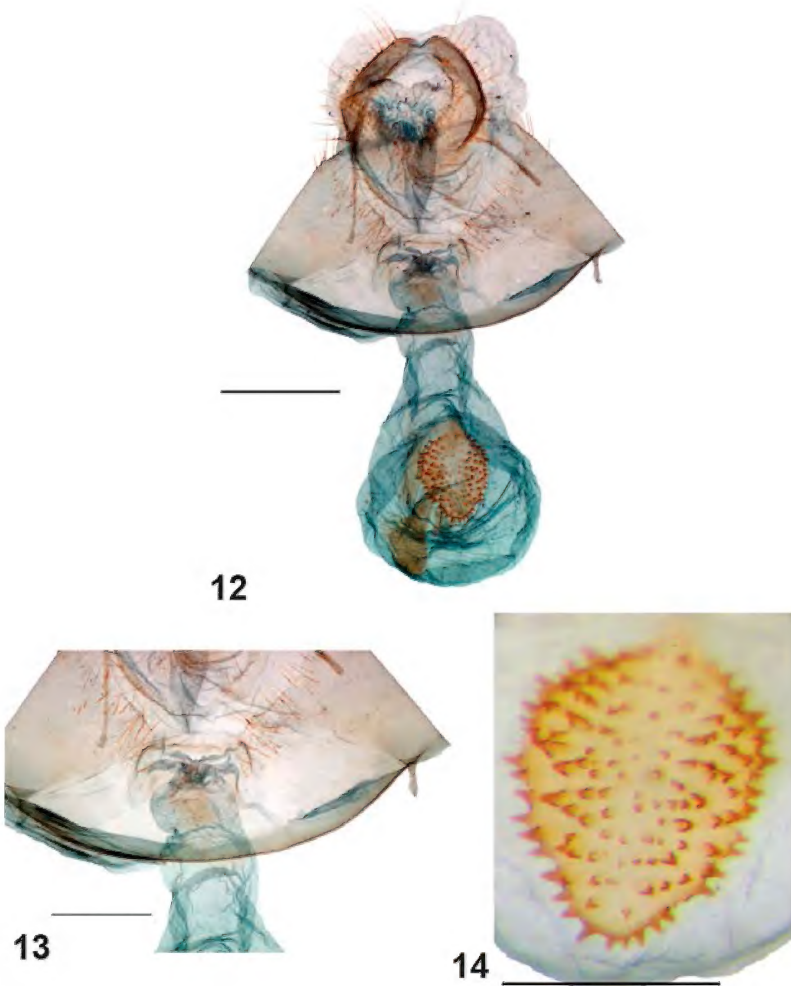
**Figs 8-9.** *Arctornis lucens* sp. n: (8) Holotype male, Mission Beach, Qld; (9) Paratype female, Cairns, Qld.

*Description* (Figs 8-9). Head white, frons lightly speckled with brownish orange, vertex brownish orange; labial palp upturned, brownish orange; antennal scape brownish orange ventrally and laterally, white dorsally, filament white, pectinations long in male, shorter in female, pale brownish yellow. Thorax moderately scaled, white; legs white, fore and mid tibia with large purplish brown spot sometimes with brownish orange edges proximally, all legs with purplish brown spot on first tarsal segment and brownish orange fifth tarsal segment. Abdomen lightly scaled, silvery white. Forewing length: male 15-16 mm; female 19 mm. Both forewing and hindwing glistening white, forewing with coruscations caused by irregular longitudinal ridges of scales, hindwing less glistening particularly within discal region; forewing with minute black discal spot at inflection of r-m; termen of fore- and hindwing with faint greyish tinge especially towards the middle. Underside of both wings milky white.



**Figs 10-11.** *Arctornis lucens* male genitalia, Mission Beach, Qld, slide ANIC19834: (10) ventral view; (11) aedeagus. Scale bars *ca* 1 mm.

Male genitalia (Figs 10-11). Tegumen and vinculum united; tegumen hood-like, narrowing considerably laterally to join very narrow vinculum, which widens ventrally; saccus weak; uncus short, broad, slightly hooked, shoulders broad, dorsally towards base a small patch of long fine setae either side of mid-line, a ventral, membranous transverse ridge extending as lobe on each side of uncus and bearing long fine setae may represent socii; valva lightly sclerotised, broad, elongate, subrectangular, broadening slightly distally,



**Figs 12-14.** *Arctornis lucens* female genitalia, Cairns, Qld, slide G336: (12) overview; (13) sterigma; (14) signum. Scale bars ca 1 mm (12, 14) or 0.5 mm (13).

sacculi well developed, harpe moderate, well sclerotised, tubular, tapering to blunt point, strongly reflexed ventrally, distal half bearing rows of small spines; annellus lightly sclerotised; juxta lightly sclerotised, r-shaped in lateral view, subrectangular plate in ventral view, longer sides emarginate; aedeagus short, broad and deep, lightly sclerotised except for two well

sclerotised, dorso-lateral finger-like lobes arising from the carina penis, coecum relatively long, reflexed ventrally, vesica without ornamentation.

Female genitalia (Figs 12-14). Papillae anales short, broad, rounded and rather narrow in terminal view, covered with long setae, apophyses posteriores moderate, projecting about half way into segment VIII, ribbon-like, truncate; segment VIII a broad collar, zone of long setae around the posterior margin, mid-ventrally a short broad channel extending about half way across sternite marking opening of sinus vaginalis, lamella antevaginalis a simple lip at anterior end of channel, lamella postvaginalis at posterior end of the channel very lightly sclerotised, rectangular with poorly defined transverse median ridge, apophyses anteriores ribbon-like, very short; pseudopapillae well developed, elongate; an almost membranous, narrowly crescentic sclerite bearing some long setae present intersegmentally between segments VIII and the ovipositor lobes; ostium bursae opening directly behind lip of lamella antevaginalis; ductus bursae very short, membranous, leading into neck of pyriform corpus bursae; signum large, inverted leaf-shaped covered with rugged, short, stout spines, smaller towards a longitudinal, medial area.

*Diagnosis.* This is the only Australian species in which males have a robust and strongly reflexed harpe. Females can be distinguished by the rugged spines of the signum.

*Etymology.* *lucens* (Latin adjective) – shining.

*Distribution.* North Queensland: coastal areas from Mission Beach north to Mt Webb.

*Remarks.* This is the most commonly collected Australian *Arctornis* species and is likely to be more widely distributed than recorded here. Males and females were associated by barcoding.

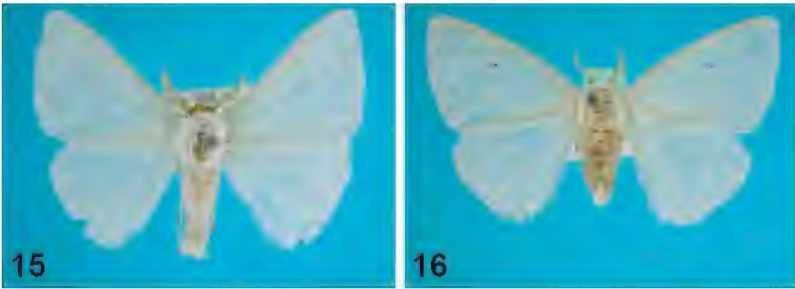
### ***Arctornis ravenshoeae* sp. n.**

(Figs 15-21)

*Types.* *Holotype* ♂, QUEENSLAND: 9 miles SSE of Ravenshoe, 21.iv.1969, I.F.B. Common & M. Upton, 2750 ft, ANIC Genitalia Slide no. 19835, in ANIC. *Paratypes*: 1 ♀, Kuranda, 1-15.iv.2005, D.C.F. Rentz, ANIC Genitalia Slide no. 19832, ANIC DNA no. 000698; 1 ♀, Mission Beach nr. Tully, 24-28.1967, R. Dobson, ANIC Genitalia Slide no. 19841; 1 ♂ Cooper's Creek, 26.viii.2003, P.D.N. Hebert, G541, DNA Barcode: LOQB517-05, Moth 210.03CC, all in ANIC.

*Additional material examined.* QUEENSLAND: 1 ♂, 4 mls W of Babinda, 10.iii.1964, I.F.B. Common & M. Upton; 1 ♂, Kuranda, 15-30.vi.2004, D.C.F. Rentz, ANIC Genitalia Slide no. 19843; 1 ♂, Kuranda, 1-15.vii.2005, D.C.F. Rentz, ANIC Genitalia Slide no. 19845; 1 ♂, Lizard Island, 1.v.2001, P.D.N. Hebert, G333, DNA Barcode: LOQB302-05, Moth 302.01LZ, all in ANIC; 1 ♀, Lake Barrine, April 1939, E.J. Dumigan, G 158, in UQIC.

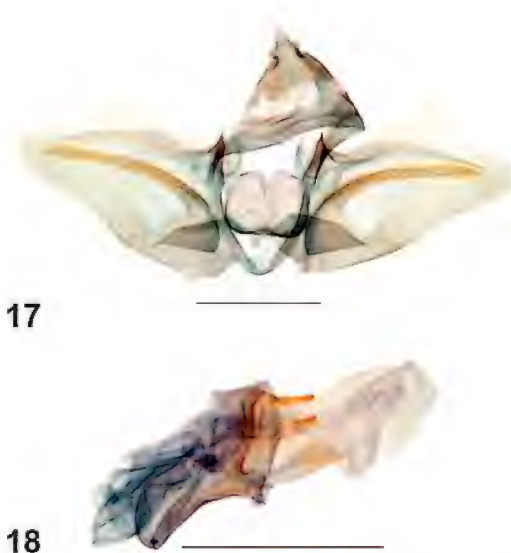




**Figs 15-16.** *Arctornis ravenshoeae* sp. n: (15) Holotype male, Ravenshoe, Qld; (16) Paratype female, Mission Beach, Qld.

*Description* (Figs 15-16). Head white, frons speckled with light orange, vertex light orange bar between antennae; labial palp white, external surface lightly speckled with orange, more densely orange towards tip; antennal scape light to deep orange, filament white, pectinations long in male, shorter in female, pale brownish yellow. Thorax, white, lightly scaled; legs white, fifth tarsal segment orange, first two legs purplish brown spot on proximal part of tibia and similar spot on first tarsal segment, leg 3 may have small often insignificant pale purplish spot on first tarsal segment. Abdomen lightly scaled, white. Forewing length: male 15-17 mm; female 18-19 mm. Forewing and hindwing glistening white, forewing with slight coruscations caused by fine, irregular longitudinal scale ridges, hindwing less glistening particularly within discal region; in some males forewing with a minute and inconspicuous black discal spot on r-m, discal spot minute but distinct in female; fringes silvery white but in some specimens a hint of grey along termen. Underside of both wings milky white.

Male genitalia (Figs 17-18). Tegumen and vinculum loosely united; tegumen hood-like, a narrow strap laterally; vinculum narrow U-shaped band widening only slightly in mid line, saccus not developed; uncus short, broad, slightly hooked, shoulders broad, dorsally towards the base with small patch of long fine setae either side of mid-line, a ventral, membranous transverse ridge extending as a lobe on each side of uncus and bearing long fine setae may represent socii; valva lightly sclerotised, subrectangular, widening slightly distally, broadly and shallowly bilobed at apex, lobes bearing long fine setae, sacculi well developed, harpe extending almost complete length of valve, ribbon-like with longitudinal rows of small, robust spines, lightly curved and tapering to a sharp point; juxta lightly sclerotised, r-shaped in lateral view, a subrectangular plate in ventral view with two large lateral depressions either side of a median ridge, both long edges emarginate; aedeagus short, broad and deep, lightly sclerotised except for two well sclerotised, stout, dorso-lateral finger-like lobes arising from carina penis, coecum relatively long, reflexed ventrally, vesica without ornamentation.



**Figs 17-18.** *Arctornis ravenshoeae* male genitalia: (17) ventral view, Cooper's Creek, Qld, slide G541; (18) aedeagus, Ravenshoe, Qld, slide ANIC19835. Scale bars *ca* 1 mm.

Female genitalia (Figs 19-21). Papillae anales short, broad, in terminal view rounded and rather narrow, densely setose, apophyses posteriores moderate, slightly tapering and extending about half way into segment VIII; segment VIII a broad collar with zone of long setae around posterior margin, mid-ventrally a short broad, partly sclerotised channel extends about half way across sternite and marks opening of sinus vaginalis, lamella antevaginalis forming slight lip at anterior end of channel, lamella postvaginalis present at posterior end of channel forming outwardly projecting shelf that in some views appears as crescentic plate, apophyses anteriores short, flat, barely projecting into segment VII; pseudopapillae well developed, elongate, widening slightly anteriorly; ventrally intersegmental membrane between VIII and ovipositor lobes has an almost membranous sclerite which forms narrow crescentic band; ductus bursae short, membranous; corpus bursae pyriform; signum large, inverted leaf-shaped, covered with short, stout spines except for longitudinally elongate central area.

*Diagnosis.* Of the Australian *Arctornis* species, *A. ravenshoeae* is only likely to be confused with *A. lucens* and males of *A. commoni* but the genitalia are distinct. Males of *A. ravenshoeae* may be distinguished by the long, straight harpe; females by the presence of the shelf-like lamella postvaginalis and a signum with gracile spines absent in elongate central area.



19



20



21

**Figs 19-21.** *Arctornis ravenshoeae* female genitalia: (19) overview and (20) sternite, Kuranda, Qld, slide ANIC19832; (21) signum, Mission Beach, Qld, slide ANIC19841. Scale bars ca 1 mm (19-20) or 0.5 mm (21).

*Etymology.* *ravenshoeae* (Latin adjective) – pertaining to Ravenshoe, in recognition of the type locality of the species.

*Distribution.* North Queensland: east coast ranges and adjacent areas from Lizard Island south to Mission Beach.

*Remarks.* The purplish brown spots on the legs may be obvious or very pale and insignificant; they may be narrowly fringed with orange and the spot on the first tarsal segment of leg 2 may be almost black. The sexes were associated by barcoding.

***Arctornis cairnsae* sp.n.**

(Figs 22-24)

*Types.* *Holotype* ♂, QUEENSLAND: Whitfield Range near Cairns, 3.iv.1975, M.S. & B.J. Moulds, ANIC Genitalia No. 19837, in ANIC. *Paratype* ♂, Kuranda, 1-15.xii.2004, D.C.F. Rentz, 335 m, ANIC Genitalia Slde no. 19844, in ANIC.

*Additional material examined.* QUEENSLAND: 1 ♂, Lake Barrine, 7.i.1939, E.J. Dumigan in UQIC; 2 ♂♂, Lake Barrine, April 1948, K469603 & K469605, in AM.

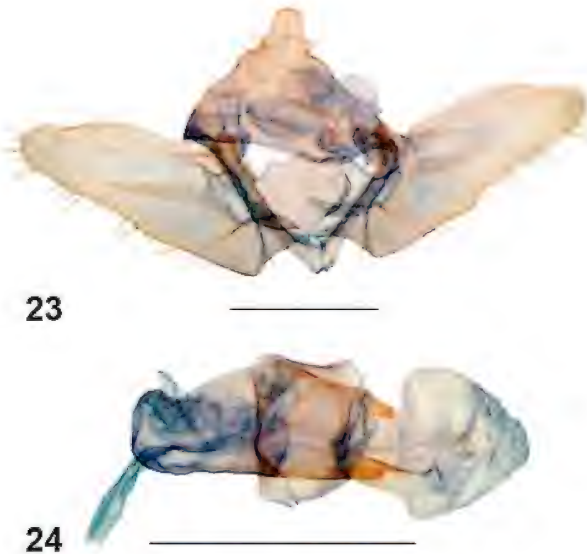


**Fig. 22.** *Arctornis cairnsae* sp. n. Holotype male, Whitfield Range, Cairns, Qld.

*Description* (Fig. 22). Male, head white, frons pale buff, vertex brownish orange; labial palp white ventrally, external lateral surface brownish orange; antennal scape brownish orange, filament pale golden yellow, pectinations long, brownish yellow. Thorax pale cream, white ventrally, sparsely scaled; legs, femur white, tarsus and tibia pale cream. Abdomen sparsely scaled, pale cream, slightly glistening. Forewing length: male 15.5-16 mm. Wings lightly scaled, ground colour of fore- and hindwings pale ivory with slight brown irroration particularly along veins and termen, which at some angles appear glistening pale gold; fringes of termen brown. Forewing with small but distinct black, discal spot on r-m. Hindwing paler towards anal margin, which has long white fringes. Underside pale ivory.

Male genitalia (Figs 23-24). Tegumen and vinculum loosely united; tegumen hood-like, very thin and strap-like laterally; vinculum narrow V-shaped band

with slight downward bow in ventral midline, saccus not developed; uncus short and broad with wide shoulders, slightly narrowing towards blunt, slightly hooked end, shoulders bear a small group of long fine setae dorsally either side of mid line; socii may be represented by ventral, membranous transverse ridge extending as lobe each side of uncus and which bears long fine setae; valva subrectangular, long, sharply elbowed dorsally close to base, gently tapering distally to bluntly rounded valvula, sacculus well developed and sharply angled at basal corner, another rather slight angle at about one third to one half of ventral margin of the valve, harpe well developed, ribbon-like, about half length of valve, strongly curved at one third and gradually tapering to fine point; juxta r-shaped in lateral view, a subrectangular plate in ventral view with ventral margin and antero-ventral angles gently rounded, lip of dorsal margin supporting aedeagus slightly bilobed; aedeagus short, broad and deep, lightly sclerotised except for two short, well sclerotised, dorso-lateral finger-like lobes arising from carina penis, coecum relatively long, reflexed ventrally and slightly inflated at its anterior end, vesica without ornamentation.



**Figs 23-24.** *Arctornis cairnsae* male genitalia, Whitfield Range, Cairns, Qld, slide ANIC19837: (23) ventral view; (24) aedeagus. Scale bars ca 1 mm.

*Diagnosis.* The colouration of the forewings of *A. cairnsae* is distinctive among Australian *Arctornis*.

*Etymology.*  *Cairnsae* (Latin adjective) – pertaining to Cairns in recognition of the type locality of the species.

*Distribution.* Only recorded from the Cairns region of northern Queensland.

*Remarks.* Only the male is known.

***Arctornis commoni* sp.n.**

(Figs. 25-27)

*Types.* *Holotype* ♂, QUEENSLAND: Iron Range, 7.iv.1964, I.F.B. Common & M.S. Upton, ANIC Genitalia Slide no. 19840, in ANIC. *Paratypes:* 2 ♂♂, Gordon Creek area, Claudie Riv. district, 22-23.vi.1982, M.A. Schneider, UQIC Reg.# 812816 and 81202, in UQIC.

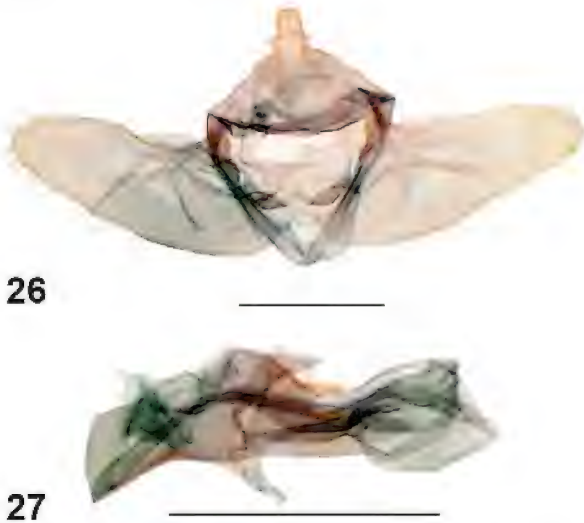


**Fig. 25.** *Arctornis commoni* sp. n. Holotype male, Iron Range, Qld.

*Description* (Fig. 25). Head white, frons heavily irrorated with orange, vertex orange; labial palp white, external surface irrorated with orange, more heavily towards the tip; antennal scape orange, filament white, pectinations long, pale brownish yellow. Thorax white, lightly scaled; legs white, first and second legs with small, pale orange spot on proximal part of tibia, first and fifth tarsal segments light orange, third leg only the fifth tarsal segment marked with pale orange. Abdomen sparsely scaled, white. Forewing length: male 15-16 mm. Wings lightly scaled, glistening white, forewing coruscations caused by irregular longitudinal ridges of scales and with a minute black discal spot on r-m, hindwing matt white across basal half; fringes grey along termen. Underside matt white.

Male genitalia (Figs 26-27). Tegumen and vinculum united; tegumen hood-like, narrowing laterally to join vinculum; vinculum narrow, V-shaped band, saccus not developed; uncus short and broad, shoulders wide, hardly narrowing toward blunt, slightly hooked end, shoulders bearing small group of long, fine setae dorsally either side of mid line; socii may be represented by ventral, membranous transverse ridge extending as lobe each side of uncus and which bears long, fine setae; valva subrectangular, long, sharply

convex dorsally close to base, gently tapering distally to bluntly rounded valvula, sacculus well developed and rounded at basal corner, harpe well developed, narrow, ribbon-like, extending about half length of valve, sharply tapering to blunt point; juxta r-shaped in lateral view, subrectangular plate in ventral view, the ventral margin medially notched, the antero-ventral angles gently rounded, lip of dorsal margin supporting the aedeagus slightly bilobed; aedeagus short, broad and deep, lightly sclerotised except for two well sclerotised, dorso-lateral finger-like lobes arising from carina penis, coecum relatively long, reflexed ventrally, vesica without ornamentation.



**Figs 26-27.** *Arctornis commoni* male genitalia, Iron Range, Qld, slide ANIC19840: (26) ventral view; (27) aedeagus. Scale bars ca 1 mm.

**Diagnosis.** *Arctornis commoni* has a similar fascies to *A. lucens* and *A. ravenshoeae* but the short, straight parallel-sided harpe easily distinguishes it from the latter two species. It is possible that worn or slightly discoloured specimens of *A. commoni* may be confused with *A. cairnsae* and these species have similar male genitalia. They may be distinguished by the valve in *A. cairnsae* which is narrower and more or less parallel-sided in its basal half, the sacculus of *A. cairnsae* is angled along the valve margin, the harpe of *A. cairnsae* is shorter after the elbow, the aedeagus of *A. cairnsae* is broader, the finger-like processes on the carina penis therefore appear more widely separated at their base, and they are more gracile than in *A. commoni*, the coecum in *A. cairnsae* is slightly inflated but is not in *A. commoni*.

*Etymology.* *commoni* (Latin noun in genitive case) – in honour of Dr Ian Common, who helped lay the foundations for the study of Australian moths and who first collected this species.

*Distribution.* Only recorded from Iron Range in Cape York Peninsula, northern Queensland.

*Remarks.* Only the male is known. The thorax and wing bases are often discoloured.

### Discussion

The Australian *Arctornis* species have fascies typical of the genus: broad, triangular wings that are generally glistening or satiny white or, occasionally, pale brownish or yellowish. It is possible that Australian species also occur in New Guinea, which is known to have a diverse *Arctornis* fauna although only three species are described. The Australian species were compared with the described New Guinea species but proved quite distinct. The biology of the Australian species is completely unknown but is likely to be similar to that of other species in the genus. The little that is known for the genus was summarised by Holloway (1999). Most of the known host plant families occur in Australia, as do some known host plant genera such as *Mangifera*, *Terminalia*, *Cinnamomum*, *Litsea* and *Camellia*. Although *Mangifera* and *Camellia* are not native to Australia, they may be potential hosts for Australian *Arctornis* given the polyphagous habit of many lymantriine species.

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